CLAIMS

What is claimed is:

1. In a communication system having a signaling path in a wireless link between a first station and a second station, a method for adapting to rapid changes affecting the signaling path, comprising:

    in at least one station, calculating a metric indicative of a changing environment between the first and second stations as a function of a change in at least one modulation attribute of a signal transmitted across the wireless link between the first and second stations; and

    adjusting a least one parameter affecting the performance of the wireless link to compensate for the rapid changes affecting the signaling path.

2. The method as claimed in Claim 1, wherein the first station is a base station and the second station is a mobile station, the metric being calculated by the mobile station.

3. The method as claimed in Claim 1, wherein the metric is indicative of motion of at least one of the stations.

4. The method as claimed in Claim 1, wherein the metric is indicative of motion of objects in the signaling path.

5. The method as claimed in Claim 1, wherein the metric is computed from a signal in an automatic gain control (AGC) loop in a receiver unit in one of the stations.

6. The method as claimed in Claim 5, wherein the metric is a function of a statistic of the signal in the AGC loop.

7. The method as claimed in Claim 6, wherein the statistic is variance.

8. The method as claimed in Claim 1, wherein the metric is computed from a phase error signal produced by a delay lock loop, matched filter, or correlator in a receiver unit in one of the stations.

9. The method as claimed in Claim 8, wherein the metric is a function of a statistic of the phase error signal.

10. The method as claimed in Claim 9, wherein the statistic is variance.

11. The method as claimed in Claim 1, wherein the metric is computed from a frequency error signal in a frequency control loop in a receiver unit in one of the stations.

12. The method as claimed in Claim 11, wherein the metric is a function of a statistic of the frequency error signal.

13. The method as claimed in Claim 12, wherein the statistic is variance.

14. The method as claimed in Claim 1, further including comparing the metric to a threshold level.

15. The method as claimed in Claim 1, wherein adjusting includes changing an antenna mode.

16. The method as claimed in Claim 15, wherein the antenna mode changes from directive to omni-directional.

17. The method as claimed in Claim 15, wherein the antenna mode changes from omni-directional to directive.

18. The method as claimed in Claim 1, wherein the parameter includes at least one of the following: data transfer rate, power level, FEC coding rate, modulation attribute, or antenna characteristic.

19. The method as claimed in Claim 18, wherein adjusting the parameter includes reducing at least one of the following to a minimum level: the data transfer rate, FEC coding rate, or modulation attribute.

20. The method as claimed in Claim 1, wherein the modulation attribute includes amplitude, frequency, phase, or combination thereof.

21. In a communication system having a signaling path in a wireless link between a first station and a second station, an apparatus for adapting to rapid changes affecting the signaling path, comprising:

in at least one station, a processing unit to calculate a metric indicative of a changing environment between the first and second stations as a function of a change in at least one modulation attribute of a signal transmitted across the wireless link between the first and second stations; and

a compensator to adjust a least one parameter affecting the performance of the wireless link to compensate for the rapid changes affecting the signaling path.

22. The apparatus as claimed in Claim 21, wherein the first station is a base station and the second station is a mobile station, the processing unit being located in the mobile station.

23. The apparatus as claimed in Claim 21, wherein the metric is indicative of motion of at least one of the stations.

24. The apparatus as claimed in Claim 21, wherein the metric is indicative of motion of objects in the signaling path.

25. The apparatus as claimed in Claim 21, wherein the processing unit computes the metric from a signal in an automatic gain control (AGC) loop in a receiver unit in one of the stations.

26. The apparatus as claimed in Claim 25, wherein the metric is a function of a statistic of the signal in the AGC loop.

27. The apparatus as claimed in Claim 26, wherein the statistic is variance.

28. The apparatus as claimed in Claim 21, wherein the processing unit computes the metric from a phase error signal produced by a delay lock loop, matched filter, or correlator in a receiver unit in one of the stations.

29. The apparatus as claimed in Claim 28, wherein the metric is a function of a statistic of the phase error signal.

30. The apparatus as claimed in Claim 29, wherein the statistic is variance.

31. The apparatus as claimed in Claim 21, wherein the processing unit computes the metric from a frequency error signal in a frequency control loop in a receiver unit in one of the stations.

32. The apparatus as claimed in Claim 31, wherein the metric is a function of a

statistic of the frequency error signal.

33. The apparatus as claimed in Claim 32, wherein the statistic is variance.

34. The apparatus as claimed in Claim 21, wherein the processing unit further compares the metric to a threshold level.

35. The apparatus as claimed in Claim 21, wherein the compensator changes an antenna mode.

36. The apparatus as claimed in Claim 35, wherein the antenna mode changes from directive to omni-directional.

37. The apparatus as claimed in Claim 35, wherein the antenna mode changes from omni-directional to directive.

38. The apparatus as claimed in Claim 21, wherein the parameter includes at least one of the following: data transfer rate, power level, FEC coding rate, modulation attribute, or antenna characteristic.

39. The apparatus as claimed in Claim 38, wherein the compensator reduces at least one of the following to a minimum level: the data transfer rate, FEC coding rate, or modulation attribute.

40. The apparatus as claimed in Claim 21, wherein the modulation attribute includes amplitude, frequency, phase, or combination thereof.

41. In a communication system having a signaling path in a wireless link between a first station and a second station, an apparatus for adapting to rapid changes

affecting the signaling path, comprising:

in at least one station, means for calculating a metric indicative of a changing environment between the first and second stations as a function of a change in at least one modulation attribute of a signal transmitted across the wireless link between the first and second stations; and

means for adjusting a least one parameter affecting the performance of the wireless link to compensate for the rapid changes affecting the signaling path.

42. A computer-readable medium having stored thereon sequences of instructions, the sequences of instructions including instructions, when executed by a processor, causes the processor to perform:

in at least one station, calculating a metric indicative of a changing environment between the first and second stations as a function of a change in at least one modulation attribute of a signal transmitted across the wireless link between the first and second stations; and

adjusting a least one parameter affecting the performance of the wireless link to compensate for the rapid changes affecting the signaling path.